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WALTER M. DICKIE, M.D., Director

Weekly Bulletin

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Entered as second-class matter February 21, 1922, at the post office at Sacramento, California, under the Act of August 24, 1912. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917.

Vol. XV, No. 28 August 8, 1936 GUY P. JONES EDITOR

Relapsing Fever in California

H. L. WYNNS, M.D., Chief, Bureau of Epidemiology, California State Department of Public Health.

While relapsing fever has long been prevalent in other parts of the world the first indication that it was present in California was in 1921 when Doctor LeRoy Briggs of San Francisco reported two cases, both confirmed by laboratory studies. The patients were infected while vacationing at Polaris, near Lake Tahoe. For some time the disease attracted little notice but in 1930 four more cases were reported. A review of the situation brought to attention five other cases which had occurred between 1921 and 1930, making eleven cases in all.

In July, 1931, the State Board of Public Health, recognizing the public health importance of the disease, adopted a resolution making it reportable and to date (June 15, 1936) one hundred and seven cases have been recorded. Table I gives the number of cases reported by years.

TABLE I

Year	Number of cases
1921	2
1923	1
1925	1
1927	2
1928	1
1930	4
1931	12
1932	16
1933	20
1934	30
1935	18
Total	107

In 83 or 77.6% of the cases listed in Table I, the diagnosis was confirmed by laboratory methods. In the others, the diagnosis was based on careful clinical history and response to treatment. A marked increase in the cases by years has been noted since 1930; however, this is probably not due to any actual increase in prevalence of the disease, but to the fact that the physicians are becoming familiar with it, and also due to the fact that since 1931 it has been reportable. As the attention of more physicians is focused on the possibility of this disease among people visiting in certain mountainous areas during the summer, it is to be expected that more cases will be recognized and reported.

TABLE II

Cases by Age and Sex

Ages	Male	Female	Total
0– 1	--	--	--
1– 4	4	3	7
5– 9	9	5	14
10–14	5	5	10
15–19	9	4	13
20–24	3	2	5
25–34	8	2	10
35–44	13	8	21
45–54	11	5	16
55+	3	3	6
Adults	1	4	5
Totals	66	41	107

The age and sex distribution of the cases is not particularly significant, as Table II illustrates. The cases appear to be more frequent in those age groups interested in vacationing in mountainous areas. Considerable difference is noted in the sex distribution—62% males and 38% females. No explanation

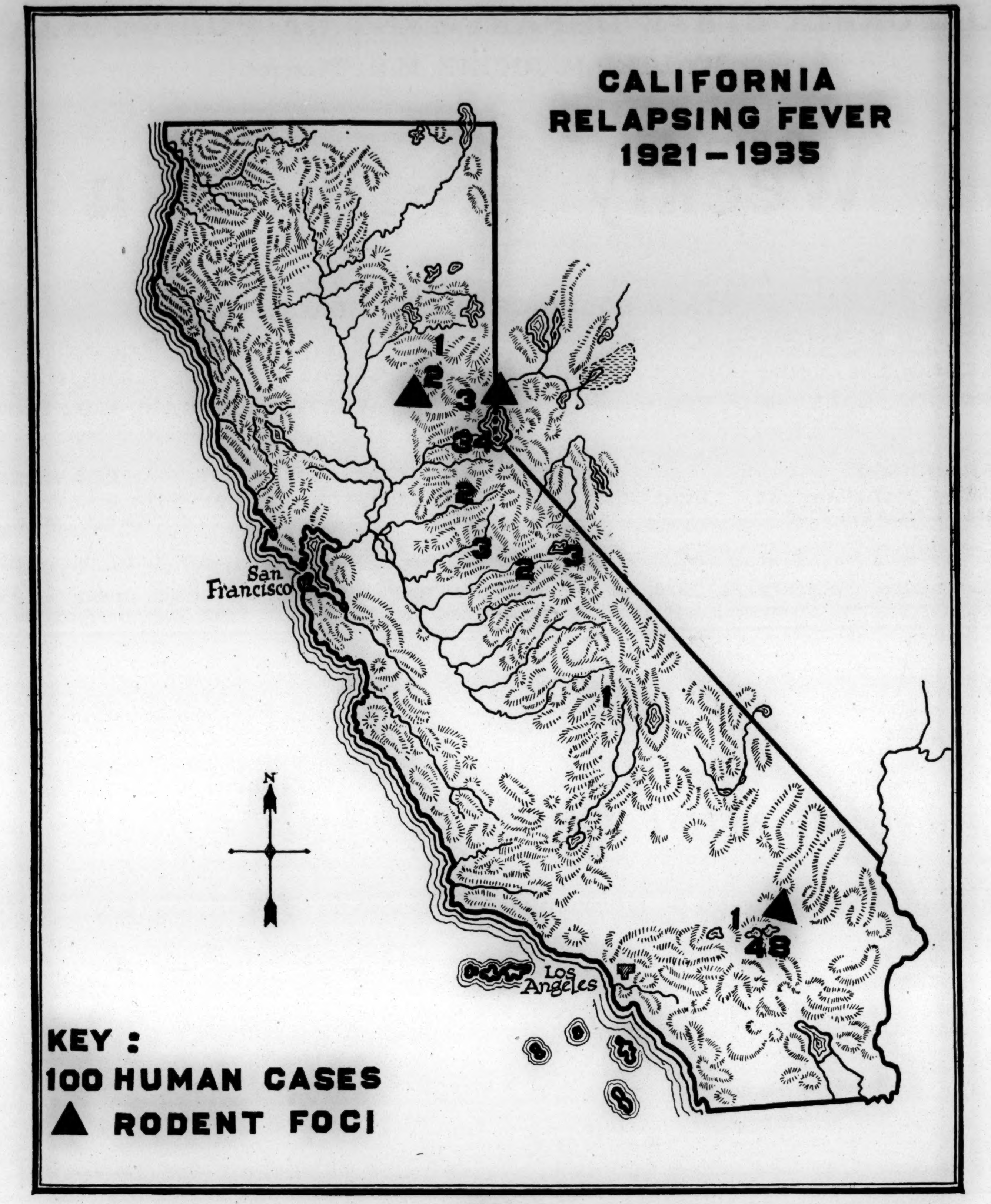

Fig. I

is offered in this difference. Actually in the resort areas more women and children are found than men.

The seasonal distribution of cases by dates of onset is interesting as shown in Table III. According to the dates of onset—89 or 83% of our series of cases occurred in June, July and August. The incidence of cases is believed to parallel the appearance and disappearance of rodents and ticks in any given locality. Both ticks and rodents hibernate during the winter months. The "out of season" cases listed in Table III need some explanation.

Two occurred in February. Unfortunately neither of these was confirmed by laboratory diagnosis, and the diagnosis may thus be open to question; however, one patient lived in a rudely constructed cabin during the winter which may have presented opportunities for infection. The other case was in an individual who operated a fox farm. He lived in a well constructed house in the infected area, but stated that chipmunks had built their nests in the

TABLE III

Seasonal Distribution of Cases

Month	1921	1923	1925	1927	1928	1930
January	----	----	----	----	----	----
February	----	----	----	----	----	----
March	----	----	----	----	----	----
April	----	----	----	----	----	----
May	----	----	----	----	----	----
June	----	----	----	1	----	----
July	----	----	----	----	----	3
August	2	----	----	----	----	----
September	----	1	1	----	1	1
October	----	----	----	----	----	----
November	----	----	----	----	----	----
December	----	----	----	----	----	----
Unknown	----	----	----	1	----	----
Totals	2	1	1	2	1	4

Month	1931	1932	1933	1934	1935	Total
January	----	----	----	----	----	0
February	----	*1	*1	----	----	2
March	----	----	----	----	----	0
April	----	**1	----	----	----	1
May	----	----	----	1	2	3
June	1	3	6	2	1	14
July	10	5	6	13	7	44
August	1	5	7	8	8	31
September	----	----	----	5	----	9
October	----	1	----	----	----	1
November	----	----	----	***1	----	1
December	----	----	----	----	----	0
Unknown	----	----	----	----	----	1
Totals	12	16	20	30	18	107

* No laboratory confirmation.
** Laboratory infection.
*** Lived in rude cabin during winter months.

attic. Also, he attended to the pelting of the foxes in February, during which operation his hands were frequently scratched and contaminated with fox blood, bringing up the possibility of direct transmission from the foxes.

The April case was the result of a laboratory accident. One patient had his onset in May, but it is felt that this case may be explained on the basis of an early spring season during 1934. The November case occurred in a patient who lived in a rudely constructed cabin during the winter months and it is quite possible that his infection was acquired in this cabin.

The geographical distribution of the cases is of decided epidemiological importance. Table IV lists the cases by counties and approximate area of infection.

TABLE IV

Geographical Distribution of Cases

Location	Number of cases	Total
SAN BERNARDINO COUNTY	--	49
Big Bear Lake and vicinity	48	--
Strawberry Lake	1	--
PLACER COUNTY	--	34
Lake Tahoe and vicinity*	34	--
EL DORADO COUNTY	--	2
Twin Bridges	2	--
NEVADA COUNTY	--	3
Soda Springs and Polaris	3	--
TUOLUMNE COUNTY	--	5
Pine Crest	3	--
Camp Mather	2	--
PLUMAS COUNTY	--	1
MONO COUNTY	--	3
SIERRA COUNTY	--	2
Packer Lake	2	--
FRESNO COUNTY	--	1
Shaver Lake	1	--
Total	--	100
Laboratory infection	--	1
California**	--	5
New Mexico	1	--
Utah	1	--
Colorado	1	--
Nevada	2	--
Unknown—Patient had been traveling through Sonora, Lake Tahoe and Carson City territory, now in Ohio—history unobtainable	--	1
Total	--	107

* Includes Nevada territory adjacent to California boundary.

** Cases occurring in California but with sources of infection in other states, exclusive of cases in Lake Tahoe area.

All of the cases recorded have occurred in the Sierra Nevada Mountains at an elevation of 5000 feet or over. No cases have been reported from the coast ranges. The majority of the cases (83) have occurred in two widely separated foci—namely Lake Tahoe and Big Bear Lake. These are famous resort areas and are visited by hundreds of vacationists. Many people maintain summer homes in these areas and practically all are closed during the winter months. The topography of all the foci is similar. The mountains are heavily wooded and abound in animal life. Heavy snowfall occurs in the winter, lasting until late May or early June. The summers are warm and pleasant. The dates of onset of recorded cases correspond roughly to the seasonal change; to the sudden increase in population due to the influx of those on vacation, and to the return of animal and insect life. In all probality the infected area extends the entire length of the Sierra Nevada Mountains. Fig. I with the cases indicated seems to bear out this impression.

(Continued in next issue)

NATIONAL INSTITUTE OF HEALTH ANNOUNCEMENT

A laboratory for the study of fungi which cause human disease has recently been established in the National Institute of Health. The need for such a laboratory has been apparent for a number of years. While the main objective of the laboratory will be research into various problems in medical mycology, it is expected that some time will be devoted to the examination of specimens and to the identification of cultures which may be submitted. Dr. McCoy, the Director, states that the laboratory will welcome the receipt of carefully prepared specimens (sections, tissues, exudates and cultures) accompanied by clinical data, and of material which can be made the basis of research studies. Material should be sent to—G. W. McCoy, Director, National Institute of Health, 25th and E Streets, N. W., Washington, D. C.

Men and women do not grow into adult success out of childish unsuccess. The child is in very truth father to the man. If we desire, as we do, to equip our children for a successful and happy life, we must realize the importance of making them successful and happy now, at the age of two or six or fourteen.—Aida de Costa Breckenridge.

LESLIE C. FRANK ACCEPTS INVITATION

Sanitary Engineer Will Address California Association of Dairy and Milk Inspectors

Leslie C. Frank, Sanitary Engineer in Charge, Milk Investigations, United States Public Health Service, Washington, D. C., has accepted the invitation of the California Association of Dairy and Milk Inspectors to deliver an address at the annual meeting at Santa Monica, during the meeting of the League of Municipalities, September 9th–12th.

The most important quality of education is flexibility. Flexibility is allied to play. Play is the essence of adaptability, and there is no prescribed pattern for it. Opportunities must be used as they come along.—Boyd H. Bode (1932).

MORBIDITY

Complete Reports for Following Diseases for Week Ending August 1, 1936.

Chickenpox

51 cases: Hayward 1, Antioch 1, Los Angeles County 5, Los Angeles 12, Pasadena 1, South Gate 1, King City 1, Orange County 2, Laguna Beach 2, Chula Vista 1, San Francisco 4, San Joaquin County 9, Lodi 1, San Luis Obispo County 1, Paso Robles 1, San Mateo County 1, San Mateo 1, Santa Barbara County 1, Palo Alto 2, Dorris 2, Ventura 1.

Diphtheria

13 cases: Oakland 2, Imperial County 1, Los Angeles County 1, Los Angeles 3, San Fernando 1, Soledad 1, Fullerton 1, San Diego 1, Santa Barbara 1, Santa Rosa 1.

German Measles

26 cases: Berkeley 2, Emeryville 1, Long Beach 3, Los Angeles 2, Orange 1, Sacramento 3, San Bernardino 1, San Diego 1, San Francisco 2, San Joaquin County 8, Lodi 2.

Influenza

11 cases: Los Angeles County 1, Los Angeles 10.

Malaria

3 cases: Berkeley 1, Monterey County 1, San Joaquin County 1.

Measles

103 cases: Berkeley 2, Oakland 1, San Leandro 1, Butte County 1, Contra Costa County 3, El Dorado County 1, Selma 1, Los Angeles County 5, Beverly Hills 1, Compton 1, Glendale 1, Long Beach 4, Los Angeles 17, Pasadena 3, Redondo 1, Santa Monica 2, Whittier 1, Gustine 1, Seal Beach 1, Laguna Beach 1, Riverside 1, Chino 3, Redlands 1, San Diego County 3, Chula Vista 2, San Diego 9, San Francisco 5, San Joaquin County 8, Lodi 2, Stockton 1, San Luis Obispo County 1, San Luis Obispo 2, San Mateo County 1, San Mateo 1, Menlo Park 3, Santa Barbara County 2, Santa Clara County 3, Palo Alto 1, Santa Clara 3, Exeter 1, Yuba County 1.

Mumps

137 cases: Berkeley 7, Oakland 2, Butte County 1, Kern County 2, Los Angeles County 6, Alhambra 6, Beverly Hills 1, Burbank 1, Glendale 3, Glendora 1, Huntington Park 1, Long Beach 1, Los Angeles 29, Pasadena 6, Pomona 1, Santa Monica 2, Whittier 3, Gardena 1, Mono County 1, Napa 1, St. Helena 1, Orange County 3, Brea 2, Newport Beach 1, Santa Ana 10, Riverside County 1, Corona 4, Riverside 1, Sacramento 2, North Sacramento 2, Ontario 1, San Bernardino 2, San Diego County 2, Coronado 1, National City 3, San Diego 7, San Francisco 1, San Joaquin County 2, Santa Barbara County 1, Santa Barbara 7, Palo Alto 2, San Jose 1, Sunnyvale 1, Watsonville 1, Ventura 1, Yuba County 1.

Pneumonia (Lobar)

25 cases: Oakland 1, Richmond 1, Bakersfield 1, Taft 1, Los Angeles County 6, Long Beach 1, Los Angeles 10, San Diego County 1, San Francisco 2, Arroyo Grande 1.

Scarlet Fever

87 cases: Oakland 4, Chico 2, El Dorado County 2, Fresno County 2, Fresno 1, Kern County 2, Kings County 1, Los Angeles County 6, Burbank 1, Compton 3, Los Angeles 10, Pasadena 1, Santa Monica 3, Torrance 1, San Rafael 3, Merced 1, St. Helena 2, Corona 1, Riverside 1, Sacramento 5, North Sacramento 1, Upland 1, San Diego County 1, San Diego 2, San Francisco 14, San Mateo County 1, Burlingame 1, Redwood City 1, Santa Clara County 2, Gilroy 1, Los Gatos 1, Palo Alto 2, San Jose 2, Vallejo 1, Santa Rosa 1, Ventura County 2, Ventura 1.

Smallpox

5 cases: Kern County 3, Siskiyou County 2.

Typhoid Fever

17 cases: Oakland 2, Fresno 1, Long Beach 1, Los Angeles 1, San Bernardino 1, San Francisco 2, San Joaquin County 2, Siskiyou County 1, Vallejo 1, Tulare County 1, Yuba County 2, California 2*.

Whooping Cough

264 cases: Alameda 2, Berkeley 7, Oakland 3, Calaveras County 1, Angels Camp 1, Richmond 1, El Dorado County 4, Fresno County 4, Fresno 2, Eureka 2, Imperial County 6, Kern County 5, Lake County 2, Los Angeles County 20, Arcadia 1, Claremont 1, Compton 1, El Monte 1, Glendale 2, Long Beach 6, Los Angeles 57, Montebello 3, Pasadena 5, Santa Monica 4, Chowchilla 1, Merced 3, Monterey County 1, Salinas 2, Napa County 1, Orange County 1, Anaheim 6, Fullerton 1, Santa Ana 1, Riverside County 2, Corona 1, Riverside 2, Sacramento 16, North Sacramento 1, San Bernardino 4, San Diego County 6, National City 1, San Diego 22, San Francisco 8, San Joaquin County 8, Lodi 10, Stockton 9, San Bruno 1, Santa Barbara 3, Gilroy 1, San Jose 1, Santa Cruz 3, Vallejo 1, Turlock 1, Oxnard 3, Yolo County 1, Davis 1.

Meningitis (Epidemic)

8 cases: Los Angeles County 1, Long Beach 1, Los Angeles 2, Merced County 1, Chula Vista 1, National City 1, Siskiyou County 1.

Dysentery (Amoebic)

3 cases: Los Angeles 1, Pasadena 1, Sebastopol 1.

Dysentery (Bacillary)

4 cases: El Monte 1, Los Angeles 1, Orange County 1, Sacramento 1.

Pellagra

5 cases: Oakland 1, Los Angeles County 2, San Francisco 2.

Poliomyelitis

16 cases: Berkeley 1, Los Angeles County 1, Huntington Park 1, Long Beach 1, Los Angeles 4, South Gate 2, Merced County 1, King City 1, Orange County 1, San Diego 1, San Francisco 1, Stanislaus County 1.

Tetanus

One case: Napa County.

Trachoma

2 cases: Westmoreland 1, Los Angeles 1.

Encephalitis (Epidemic)

3 cases: Merced County 1, Santa Clara County 2.

Paratyphoid Fever

3 cases: Oakland 1, Tehama County 2.

Food Poisoning

12 cases: Fresno County 1, Long Beach 2, Madera County 3, San Francisco 6.

Undulant Fever

4 cases: Los Angeles 1, Merced 1, South San Francisco 1, Siskiyou County 1.

Tularemia

One case: Ventura County.

Coccidioidal Granuloma

One case: Paso Robles.

Septic Sore Throat (Epidemic)

5 cases: Madera County 2, Chowchilla 2, Merced County 1.

Relapsing Fever

3 cases: El Dorado County 2, Mono County 1.

Rabies (Animal)

20 cases: Los Angeles County 8, Alhambra 1, Culver City 1, Glendale 1, Inglewood 1, Long Beach 4, Los Angeles 1, Orange County 1, Newport Beach 1, Beaumont 1.

> Health! thou most august of the blessed goddesses, with thee may I spend the remainder of my life, mayest thou benignly dwell with me; for if there be any pleasure to be derived from riches, or if there be any delight bestowed on men, or respite from pains, with thee, blessed health, all these flourish and beam effulgent like the spring arising from the graces; without thee no one is happy.—Ariphron.

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* Cases charged to "California" represent patients ill before entering the State or those who contracted their illness traveling about the State throughout the incubation period of the disease. These cases are not chargeable to any one locality.

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